

DRAWING AMENDMENTS

Enclosed are replacement sheets for FIGURES 1 - 2 and FIGURES 5 - 6 of the drawings. Also enclosed are copies of the original drawings marked to show the revisions.

REMARKS

Applicant has carefully reviewed the Official Action dated October 6, 2005 for the above identified patent application.

Applicant has revised some of the reference numerals identified at page 2, penultimate paragraph of the specification which discusses Figures 1 and 2 of the drawings, to conform to the reference numerals in the drawings. Additionally, some of the reference numerals in Figures 1 and 2 of the drawings have been revised to conform to the reference numerals used in the penultimate paragraph of page 2 of the Specification. Applicant respectfully submits that the reference numerals designated in the discussion of Figures 1 and 2 of the Specification (as amended herein) conforms to the reference numerals designated in Figures 1 and 2 of the drawings (as amended herein).

Applicant has also replaced reference numeral 28, which refers to the "outer panel" at the next to the last line of the last paragraph of page 2 of the Specification, with reference numeral 29. Additionally reference numeral 28 has been replaced with the reference numeral 29 in Figures 5 and 6 of the drawing to conform to the revision to the Specification. The reason for this change is that reference numeral 28 has already been used in the Specification and drawing to designate the region at which the rear end of the impact guard beam 22 joins the rear standing

hat beam 15 (See Figures 1 and 2 of the drawing and page 3, second full paragraph of the Specification).

The form of independent Claim 1 has been revised to refer to "front" and "rear" pillars, and to "front" and "rear" standing hat beams. The form of the dependent claims has been revised to correspond to the revisions made to the form of parent independent Claim 1. The preamble of the claims has been revised to recite "A vehicle door" to conform to the invention described in the original specification and illustrated in the original drawings.

Additionally, independent Claim 1 has been revised to recite that the vehicle door (either front or rear door) has a front standing hat beam having a varying profile height, and at least a portion of which overlaps the front pillar, and a portion that does not overlap the front pillar. This revision to independent Claim 1 is supported by Figures 3 and 5 of the drawings as originally filed, and the discussion of these drawing figures in the original specification.

New independent Claim 21 has been added to this application. Independent Claim 21 generally corresponds to independent Claim 1, as revised herein, except that Claim 21 recites a vehicle door (either front or rear) having a rear standing hat beam has a varying profile height and a portion which overlaps the rear pillar, and a portion which does not overlap the rear pillar.

Independent Claim 21 is supported by Figures 4 and 6 of the originally filed drawings, and the discussion of these drawings in the original specification.

Dependent Claim 3 has been cancelled, without prejudice, since the features of this claim are now included in amended independent Claim 1. Dependent Claims 11 and 15, which depended from Claim 3, have been cancelled, without prejudice, in view of the cancellation of parent Claim 3.

No additional fee for newly added independent Claim 21 and newly added Claim 22 is enclosed. The cost of these newly added claims is covered by the original filing fee paid for this application, in view of the cancellation of Claims 3, 11, and 15, herein.

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At page 2, paragraph 2 of the Official Action, independent Claim 1 has been rejected as being obvious under 35 U.S.C. Section 103(a) in view of the Dossin et al patent (U.S. Patent No. 5,040,334), in view of the Gehringhoff et al (U.S. Patent No. 6,517,142), in further view of the Weber patent (U.S. Patent No. 6,302,473).

Applicant respectfully submits for the reasons discussed herein, that independent Claim 1, as amended herein, is

patentable over the three prior art references combined in the Official Action and applied to reject independent Claim 1.

As noted above, independent Claim 1 now specifically recites a door structure in which a door frame is formed from a structure including a front hat beam having a varying profile height along its length and having a portion that overlaps the front pillar, and a portion that does not overlap the front pillar. Similarly, newly added independent Claim 21 specifically recites a door structure in which a frame includes a rear hat beam having a varying profile height along its length, and having a portion that overlaps the rear pillar, and a portion that does not overlap the rear pillar.

Both the Weber and Gehringhoff patents disclose conventional doors in which the inside panel 10 (Weber) and the inner metal sheet 6 of the door (Gehringhoff) are the supporting structure of the doors. These supporting structures are deep drawn and carry the outer panel on their outside and trim on their inside. High strength steel cannot be deep drawn, and therefore the inner panel cannot be formed from high strength steel (Also see the discussion of the background prior art at page 1, second paragraph of Applicant's Specification). The inner panel disclosed by these two prior art references always overlaps the front and rear pillars since the inner panel extends the entire width of the door. Moreover, both the Weber and Gehringhoff patents disclose vehicle door structures requiring a separate

beam to be welded to the inner panel to transmit forces from the front pillar to the door during a front collision. The separate beams are formed from high strength steel.

Contrary to the disclosures of the Weber and Gehringhoff patents, Applicant's independent Claims 1 and 21 define a door frame structure in which only a portion of a front standing hat beam overlaps the front pillar of a vehicle (independent Claim 1), or a door frame in which only a portion of a rear standing hat beam overlaps the rear pillar of a vehicle (independent Claim 21). The advantages of the structure of the door frame, and the structural relationship between the door frame and the front and rear pillars, is discussed more fully in Applicant's specification.

The structural relationship between the front standing hat beam of the door frame and the front pillar of the vehicle (independent Claim 1) and the rear standing hat beam of the door frame and the rear pillar of the vehicle (independent Claim 21), avoids the need to provide a separate beam welded to the door frame in order to transmit forces from the front rear pillars to the door frame. The advantages of this aspect of the invention are more fully discussed in Applicant's Specification at, for example, page 4, first and second full paragraphs.

The Dossin et al patent likewise does not teach or suggest the structure and structural relationship now recited in

independent Claims 1 and 21. As the Examiner has acknowledged at page 2, second paragraph of the Official Action, "...Dossin et al. does not disclose the standing hat beams overlapping their corresponding pillars, the lower hat beam being horizontal, or the frame being made of high strength steel". Therefore, the Dossin et al patent clearly does not teach or suggest the structure and structural relationship recited in independent Claims 1 and 21 in which front and rear standing hat beams of vehicle doors, partially but not completely, overlap front and rear pillars, respectively. Since the Dossin et al patent discloses a metal frame on the inside of the door, the frame will overlap both pillars over the entire interface between the standing beams and the pillars.

In summary, neither Dossin et al, Gehringhoff et al, or Weber teach or suggest a vehicle door having a front standing hat beam which has a portion overlapping a front pillar of the vehicle and a portion not overlapping the front pillar (independent Claim 1), or a vehicle door having a rear standing hat beam which has a portion overlapping a rear pillar of the vehicle and a portion not overlapping the rear pillar (independent Claim 21). As noted, the applied references disclose vehicle doors in which the door overlaps the vehicle pillars along the entire interface between the beams and the pillars.

Additionally, with respect to the Dossin et al patent, this patent discloses that the frame, the supporting structure of the door, is located close to the passenger, and will strike the passenger as it starts to deform in a side impact collision. Figure 2 of the Dossin et al patent shows the trim 17 and the internal structural component 16 of a vehicle door. The internal component consists of a metal part 1 and a plastic part 2 molded together. It is clear from Figure 2, that the plastic part 2 is on the outside of the metal part 1. The trim 17 on the inside of the metal part 1 only covers the metal part 1. The panel 9 of the plastic part 2 extends below oblique side 3a of the metal part 1, and the oblique side 3 is the lowest part of the metal part 1. Figure 2 of the Dossin et al patent illustrates trim 17. It is apparent from Figure 3 of the Dossin et al patent that the outer panel 24 is to be fastened to the trim 17. Outside panel 24 cannot be fastened to the metal part which is on the inside of the plastic part 2. During molding of the plastic part 2, a boss 12 is provided on the plastic part towards the outside of the door for supporting a window lifter, which must be situated on the outside of the plastic part 2. The only space available for the window guides and similar structure is provided between the sealed component 23 and the outside panel 24. Therefore, the outside panel 24 is as far away from the metal part 1 as possible, resulting in the side impact guard 3 being as close to the passenger in the vehicle as possible. Contrary to the disclosure of Dossin et al, in the preferred embodiments of applicant's invention, the side impact guard beam 22 adjacent to

the outer panel of the door, is as far away from the passenger as possible (See page 3, first paragraph of Applicant's Specification).

The Official Action also states that Dossin et al discloses that outer flanges of the hat beams are connected to an outer panel. Applicant respectfully disagrees. As illustrated by Figures 2 and 3 of the Dossin et al drawing, the outer panel 24 is connected to the plastic trim 17. On the contrary, Applicant's independent Claims 1 and 21 both recite that the outer panel of the door is carried by the outer side flanges of the hat beams forming the door frame.

For the reasons discussed herein, Applicant respectfully submits that none of the three references applied to reject independent Claim 1 in the Official Action teaches or suggests the vehicle door defined by that claim when all features of the claim, as amended herein, are considered in the patentability determination. Since none of the individual applied references teaches or suggests Claim 1 when viewed as a whole, it is clear that a combination of these references likewise cannot teach or suggest the claim. Applicant submits that there is clearly no motivation or suggestion in the prior art itself to combine any of the three applied references in any manner rendering independent Claim 1, as amended herein, obvious. See, for example, Micro-Chemical, Inc. v. Great Plains Chemical Co., Inc.,

41 USPQ 2d 1238 (Fed. Cir. 1997); and In re Fritch, 23 USPQ 2d 1780 (Fed. Cir. 1992).

Applicant respectfully submits that independent Claim 1 is allowable over the prior art of record. Similarly, newly added independent Claim 21 is allowable over the prior art of record for the reasons discussed herein, based upon the same arguments presented with respect to independent Claim 1.

Applicant submits that independent Claims 1 and 21 are in condition for allowance. The remaining dependent claims, which depend directly or indirectly from one of the two independent claims, are allowable, at least for the same reasons as their respective parent independent claims.

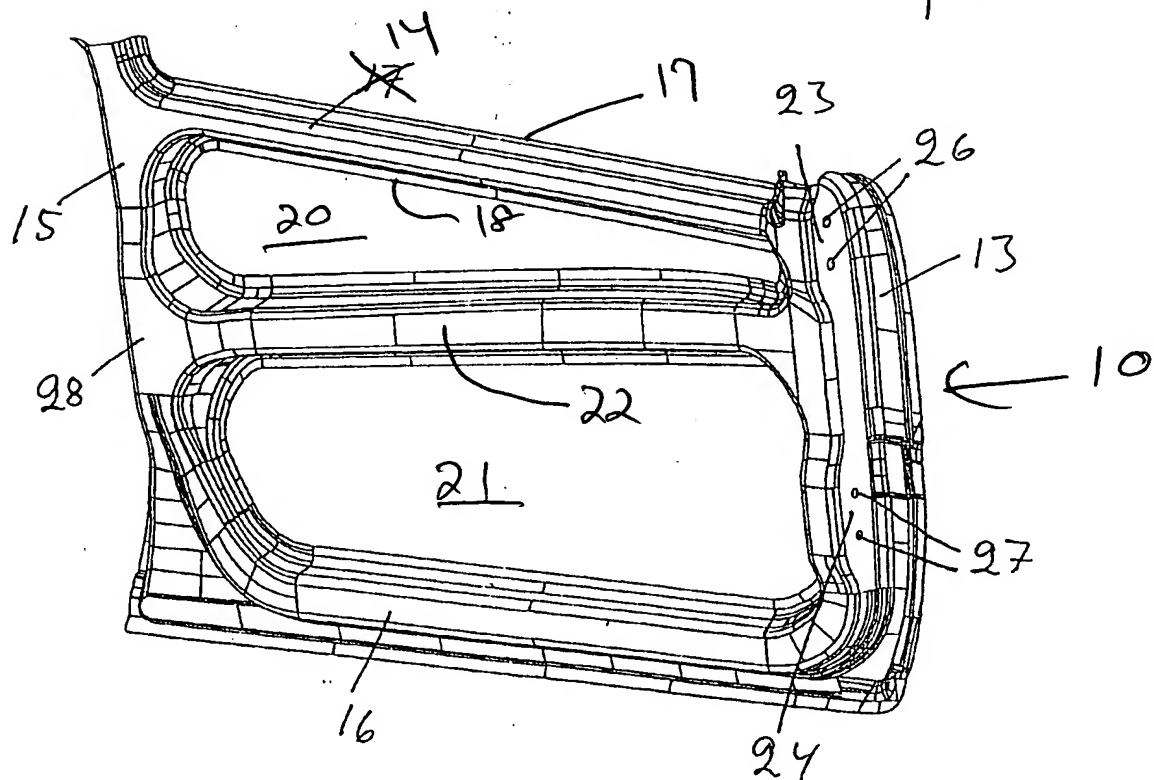
Applicant submits that this application is in condition for allowance, and favorable action is respectfully requested.

Respectfully submitted,



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Marked Drawing Showing Revisions

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